20001211.ba v03_n056.bam.20001211

>From ???@??? Mon Dec 11 05:13:52 2000 -0600
Date: Mon, 11 Dec 2000 05:11:01 CST
From: Old Tube Radios <boatanchors@theporch.com>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: BOATANCHORS digest 3056
Message-Id: <20001211121232.C60C05E76@devel43.theporch.com>

BOATANCHORS Digest 3056

Topics covered in this issue include:

1) CU-5069/FRD-10A(U) Anrtenna Multicoupler
by DCrespy@aol.com
2) Re: CU-5069/FRD-10A(U) Anrtenna Multicoupler
by "James C. Garland" <4cx250b@miavx1.acs.muohio.edu>
3) RE: GB> QRG
by "Christopher A.Bowne" <radiobwn@riconnect.com>
4) Nat'l 5886 (was Doghouse Sighting)
by "ROBERT W. DOWNS" <RWDowns_WA5CAB@compuserve.com>
5) DM-36
by "ROBERT W. DOWNS" <RWDowns_WA5CAB@compuserve.com>
6) Re: An unusual and clever tuning eye circuit
by "Hue Miller" <kargokult@proaxis.com>
7) Re : Meter "E.S."
by "Hue Miller" <kargokult@proaxis.com>
8) CU-5069/FRD-10A(U) Antenna Multicoupler
by Tom Smith <tsmith@hal-pc.org>
9) B&W 5100 Modification
by Robert Kemp <rkemp@mr.net>
10) Re: INVENTOR OF MAGIC EYE TUBE
by "Arthur I. Larky" <ail0@lehigh.edu>
11) RE: An unusual and clever tuning eye circuit
by Morris Odell <MorrisO@vifp.monash.edu.au>
12) Need Advice
by James Hanlon <knjhanlon@qwest.net>
13)
by Morris Odell <MorrisO@vifp.monash.edu.au>
14) FS: tube storage
by Avery Comarow <acomarow@usnews.com>
15) W9DYV
by "Bob Nickels" <ranickel@mwci.net>
16) Re: Need Advice
by Arden Allen <gumbear@pacbell.net>
17) Re: GB> QRG
by "Marty's Refl. Drop" <polepeeg@aa4rm.ba-watch.org>
18) FS: Give yourself an exceptional 75A-4 for the holidays

by Larry Wolken <rhys@ix.netcom.com>
19) Unending cupidity - "Bring 'em up slow"
by "Marty's Refl. Drop" <polepeeg@aa4rm.ba-watch.org>
20) Re: Need Advice
by plmills@attglobal.net

From: DCrespy@aol.com
Message-ID: <39.da90ddd.27645224@aol.com>
Date: Sat, 9 Dec 2000 22:27:32 EST
Subject: CU-5069/FRD-10A(U) Anrtenna Multicoupler
To: Old Tube Radios <boatanchors@theporch.com>
MIME-Version: 1.0
Content-Type: text/plain; charset="US-ASCII"
Content-Transfer-Encoding: 7bit

As a group I think we bought about 100 of these from W. J. Ford in Canada.

Did anybody ever get a schematic or a manual for this Multicoupler? I could not find one.

(Mine is now the mainstay for the receivers in my shack and I'd hoped to have a little more information to maintain it!)

Thanks to anyone who can help....

73

Harry KG5LO
Saline MI

Message-Id: <4.2.0.58.20001209231440.00aaccd0@miavx1.muohio.edu>
Date: Sat, 09 Dec 2000 23:21:01 -0500
To: Old Tube Radios <boatanchors@theporch.com>
From: "James C. Garland" <4cx250b@miavx1.acs.muohio.edu>
Subject: Re: CU-5069/FRD-10A(U) Anrtenna Multicoupler
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"; format=flowed

I don't have a schematic, Harry, but it's a very simple circuit. As I recall, there's a simple 28V power supply, a one transistor preamp, which drives a push-pull driver, which drives 32 identical one-transistor emitter-followers, which have a 50 ohm output impedance. There's really nothing to go wrong except for a possible tranistor failure, and the circuit is so straightforward that it's very easy to troubleshoot. I run mine 24 hours/day, but disable one bank of 16 channels to reduce heat. I also run mine on 107V using a step-down xfmr from my junkbox, also to

reduce heat.
73,
Jim Garland W8ZR

At 10:27 PM 12/9/2000 , you wrote:
>As a group I think we bought about 100 of these from W. J. Ford in Canada.
>
>Did anybody ever get a schematic or a manual for this Multicoupler? I could
>not find one.
>
>(Mine is now the mainstay for the receivers in my shack and I'd hoped to have
>a little more information to maintain it!)
>
>Thanks to anyone who can help....
>
>73
>
>Harry KG5LO
>Saline MI

Message-ID: <01C06237.7D7DE5A0@dial58.pm3-v90.mystic.riconnect.com>
From: "Christopher A.Bowne" <radiobwn@riconnect.com>
To: Old Tube Radios <boatanchors@theporch.com>
Cc: "'boatanchors@theporch.com'" <boatanchors@theporch.com>
Subject: RE: GB> QRG
Date: Sat, 9 Dec 2000 23:23:16 -0500

FWIW, the East Coast Old Military Radio Net CW Session meets on 3570 kc
every Sunday night at 2100-2200 Eastern. The frequency seems pretty quiet
at other times. C'mon up!

73,

Chris Bowne, AJ1G
Stonington, CT
radiobwn@riconnect.com

Date: Sun, 10 Dec 2000 00:47:05 -0500
From: "ROBERT W. DOWNS" <RWDowns_WA5CAB@compuserve.com>
Subject: Nat'l 5886 (was Doghouse Sighting)
To: Old Tube Radios <boatanchors@theporch.com>
Message-ID: <200012100047_MC2-BE03-873F@compuserve.com>
MIME-Version: 1.0
Content-Transfer-Encoding: quoted-printable

Content-Type: text/plain;
      charset=ISO-8859-1
Content-Disposition: inline

Jim, John & Group,

The 5886 was used with the HFS. I have several National manuals on it th=
at
also cover the power supply. Pretty thin manuals, though. Definitely no=
t
written for the Signal Corps!

Message text written by James Hanlon
>My '44 ARRL Handbook lists the 697 as having 6.3 volt heater and
230 volt, 75 ma output. It is suitable for powering an HRO. I'm
running my FB7A from it with an extra 2.5 volt filament
transformer. I don't have the specs on the 5886. Perhaps
someone else on the list or on the Millen reflector would.
<

73,
Robert Downs
<RWDowns_WA5CAB@compuserve.com>
Houston

Date: Sun, 10 Dec 2000 00:47:04 -0500
From: "ROBERT W. DOWNS" <RWDowns_WA5CAB@compuserve.com>
Subject: DM-36
To: Old Tube Radios <boatanchors@theporch.com>
Message-ID: <200012100047_MC2-BE03-873E@compuserve.com>
MIME-Version: 1.0
Content-Transfer-Encoding: quoted-printable
Content-Type: text/plain;
      charset=ISO-8859-1
Content-Disposition: inline

Message text written by Old Tube Radios
>Anyone know what radio a DM-36 dynamotor is mated to?<

24 volt version for BC-603 and BC-683 (receivers in SCR-508 and SCR-608).=

Robert Downs
<RWDowns_WA5CAB@compuserve.com>
Houston

Message-ID: <0a5101c06293$d335b200$7efd91c6@oemcomputer>
From: "Hue Miller" <kargokult@proaxis.com>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: An unusual and clever tuning eye circuit
Date: Sun, 10 Dec 2000 02:27:28 -0800
MIME-Version: 1.0
Content-Type: text/plain;
     charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

Those digit-readout tubes driven by 170 volt supplies, where are data and specs on those devices compiled? I have seen a lot of tube manuals, but don't think i have ever come across anything like a tube manual on them. I have some of those tube-lettes now, and would like to at least think about practical uses for them, before i actually pass them on. These things don't actually use anything like thermionic electron flow, do they?
Tnx, Hue Miller

Message-ID: <0ab801c06296$d0118740$7efd91c6@oemcomputer>
From: "Hue Miller" <kargokult@proaxis.com>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Re : Meter "E.S."
Date: Sun, 10 Dec 2000 02:48:57 -0800
MIME-Version: 1.0
Content-Type: text/plain;
     charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

I have some large instruments ("meters") marked in DBM, down where the small print is, are the letters " 25uA ES ".
So, what means "ES" ?
"Extended Scale", or ????
the long pointer actually rests near the extreme left end of the meter range, and it kinda acts like a weak magnet attracts it there until overcome by electrical or mechanical force.
Tnx, Hue Miller

Message-ID: <3A338F8D.3948061E@hal-pc.org>
Date: Sun, 10 Dec 2000 08:13:33 -0600
From: Tom Smith <tsmith@hal-pc.org>
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
Subject: CU-5069/FRD-10A(U) Antenna Multicoupler

Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

I am looking for a military multicoupler tube or otherwise (I know - bad move) preferably rack mount, to help me raise the radio/antenna ratio. I may have to go the coaxial antenna switch route which would partially solve the problem, but I thought I'd run the traps first. I think I have another 3/16" of rack space begging for something.

I still have the Gates BC-250-GY with accessory gear and manuals available for $500.

Thanks!
Tom N5AMA

Message-ID: <3A33B944.E0D5B4F0@mr.net>
Date: Sun, 10 Dec 2000 11:11:32 -0600
From: Robert Kemp <rkemp@mr.net>
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
Subject: B&W 5100 Modification
Content-Type: multipart/mixed;
 boundary="------------0CC0CF058500AE7E8EB68C6E"

This is a multi-part message in MIME format.
--------------0CC0CF058500AE7E8EB68C6E
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

I was digging through a drawer and found a unit that came off of
B&W5100B I think. There's no manufacturer on the unit, yet it appears to
be constructed quite well (more like an aftermarket unit vs.
manufacturered by one of the big names!)
There was a small circuit board with a 6AL5 on it that. The circuit
board also had a set of contacts that would fit around an octal tube
...it didn't replace the octal tube, but appears to be another stage!
The other unit is in a little metal box about 2" square, 3" long and has
connection wires going to a 7 pin male socket. This unit has two tubes
on it
and the little box mounted inside the B&W.
Since I didn't have any documentation with this accessory/modification I
removed it thinking eventually something would turn up.
Anyone recall a mod like this/aftermarket kit/ or whatever for the
B&W???
Happy Holidays to one and all.
Bob.

P.S. If someone knows what it is, they can have it...how's that?
--------------0CC0CF058500AE7E8EB68C6E
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

```
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
*         ---REMAINDER OF MESSAGE TRUNCATED---             *
*     This post contains a forbidden message format        *
*  (such as an attached file, a v-card, HTML formatting)   *
*    Mail Lists at theporch.com only accept PLAIN TEXT     *
* If your postings display this message your mail program *
* is not set to send PLAIN TEXT ONLY and needs adjusting  *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
```

--------------0CC0CF058500AE7E8EB68C6E--

Message-ID: <3A33E499.8DBFE971@lehigh.edu>
Date: Sun, 10 Dec 2000 15:16:25 -0500
From: "Arthur I. Larky" <ail0@lehigh.edu>
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
CC: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: INVENTOR OF MAGIC EYE TUBE
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

JOHN.SEHRING@ecunet.org wrote:

>
> I am proud to say I own DuMont AR-304 and AR-304R o'scopes in A1 shape.

I've got a pair of DuMont 208's with manuals. They worked the last time I tried them.
Art K3HBA

Message-ID: <07A064EA6042D4118A62009027F70E77874C@nt_exchange.vifp.monash.edu.au>
From: Morris Odell <MorrisO@vifp.monash.edu.au>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: RE: An unusual and clever tuning eye circuit
Date: Mon, 11 Dec 2000 09:03:27 +1100
MIME-Version: 1.0
Content-Type: text/plain;
     charset="iso-8859-1"

Hue wrote:

> Those digit-readout tubes driven by 170 volt supplies,

There are lots of different tubes that can come under this category including nixies and dekatrons, both of which are gas discharge devices. There are also counting non-display devices such as trochotrons and beam-X tubes. There are several websites devoted to these unusual tubes which you can find by doing a Google search.

I saw some very unususal display tubes a couple of days ago when I found an amazing but little known avionics museum right here in Melbourne. These were part of a very early English digital counter. They are about the size of a 6V6GT, perhaps a little taller. The display is on the top inch or so and consists of 2 rows of little digits each about 1/4" high, viewed from the side. What I could see of the rest of the tube suggested it was thermionic in nature. Unfortunately I couldn't see it in operation.

Has anyone heard of these? I can't say I have and I've certainly read a lot of tube manuals over the years. The tube geometry would suggest an electron beam may have been bent and deflected to reach a given target. There was no sign that I could see of a magnet.

73 de Morris VK3DOC

Message-ID: <3A3424B2.259D7676@qwest.net>
Date: Sun, 10 Dec 2000 17:49:54 -0700
From: James Hanlon <knjhanlon@qwest.net>
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Need Advice
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

Anchorites,

I'm writing an invited article for ER tentatively titled, "How to Repair a Receiver." The idea is to help a new BA aficionado who has no experience take on and complete the restoration of a receiver. I'd appreciate some advice from y'all on reforming electrolytic filter capacitors. I know the basic game is to bring the dc voltage up on them slowly, watching the leakage current at each step until it decays to an acceptable value. (Am I correct, or is there a better way?) What would you suggest for voltage steps, and what is

a reasonable value of leakage current for the capacitor to
decay to before going to the next step? Also, do you have a
feel for the leakage resistance one might measure across an
acceptable filter cap while checking it with a VOM or VTVM?

Thanks,

Jim, W8KGI

Message-ID: <07A064EA6042D4118A62009027F70E778751@nt_exchange.vifp.monash.edu.au>
From: Morris Odell <MorrisO@vifp.monash.edu.au>
To: Old Tube Radios <boatanchors@theporch.com>
Subject:
Date: Mon, 11 Dec 2000 13:02:11 +1100
MIME-Version: 1.0
Content-Type: text/plain;
     charset="iso-8859-1"

Hi all,

Take a look at:

http://www.webiosis.co.uk/valves/

This has some wonderful pictures including the "mystery" display tube I
mentioned earlier which turns out to be an E1T (thanks Brian)

73 de Morris VK3DOC

Message-Id: <3.0.6.32.20001210210116.0079fc70@pop3.norton.antivirus>
Date: Sun, 10 Dec 2000 21:01:16 -0500
To: Old Tube Radios <boatanchors@theporch.com>
From: Avery Comarow <acomarow@usnews.com>
Subject: FS: tube storage
Cc: dcboatanchors@qth.net, dcboatanchors@topica.com
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

Well, guys, my stupidity might do somebody some good. I ordered two cartons
and divider sets from Antique Electronic Supply to hold my overflow of
miniature tubes, assembled the dividers this afternoon and went downstairs
a few minutes ago to happily do some organizing. Then I discovered that the
dividers only hold UNBOXED tubes, and mine are in boxes (which I also paid
$$ for).

Since I've taped the cartons and would have to strip off the tape I used to close the cartons, I can't very well return the stuff to AES, although I probably could make a case that the catalog blurb is misleading.

So if somebody needs storage for 7- and 9-pin tubes, here it is. It consists of (2) sets of part no. S-B123, the interlocking dividers, which fit into (2) cartons, part no. S-B127, 15"x15"x4". Each carton and divider set holds 289 unboxed tubes, so altogether you'd get 578 spaces in the two cartons.

I paid $7.36 for each set of dividers and $4.50 for each carton, for a total of $23.72, plus $4 shipping. I'll sell it all for $17 and I'll pay shipping, or pick it up near Washington DC for $14. You save at least $10 over the AES price.

Sure wish I'd asked when I placed the order over the phone....

73, Avery W3AVE

Message-ID: <00ba01c06326$55f069a0$0101a8c0@hppav>
From: "Bob Nickels" <ranickel@mwci.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: W9DYV
Date: Sun, 10 Dec 2000 21:47:30 -0600
MIME-Version: 1.0
Content-Type: text/plain;
charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

I thought I'd post a short note, perhaps others might like to chime in...but those of us on the Hallicrafters net on 14.293 today got a real treat - Wes Schum, SSB pioneer and founder of Central Electronics dropped by! Now living in Tennessee, Wes was running a 200V and 600L and sounded fantastic. He noted that the engineer who designed the broadband couplers for the 600L had been in touch (after 45 years), and described his cordial relationship with Bill Halligan back in the heyday of ham manufacturing in Chicago, among other interesting comments. I had to leave, but he promised to stay around for the Vintage Sideband Net which followed.

It was fantastic to hear from one of the true pioneers from the Boatanchor era!

73, Bob W9RAN

Date: Sun, 10 Dec 2000 20:22:10 -0800
From: Arden Allen <gumbear@pacbell.net>

Subject: Re: Need Advice
To: Old Tube Radios <boatanchors@theporch.com>
Message-id: <0G5D004W6YOYHZ@mta6.snfc21.pbi.net>
MIME-version: 1.0
Content-type: text/plain; charset=ISO-8859-1
Content-transfer-encoding: 7bit

Hi Jim;

What a coincidence! I just finished reading your enjoyable article in ER about the RME-70. You had some good fun with that RX.

About reforming electrolytics: Forty or more year old electrolytic capacitors, in my experience, can give you anywhere from reliable service to disastrous results. Disasters such as ruining a nice 5Y3GT, never to glow again, or the total damnation of a destroyed power transformer. Fortunately I have avoided blowing a transformer but I've suffered a couple of 5Y3GT losses.

There is no assurance that what appears to be a satisfactorily functioning 'lytic will continue to be fine and not short. There is always a risk in trying to give new life to old filter caps. If you choose to gamble you should assure yourself some protection by adding a fuse (if not already present) to the primary circuit of the power transformer in receivers that have relatively few tubes (10 or less is my guess) or for lotta tube receivers a fuse in the B+ line.

Most old electrolytics will fail by opening up due to corrosion of internal connections. Caps that are dried out (usually the cheaper cardboard container types) will be found to have very little capacitance remaining. But be warned, some caps will work fine and then suddenly short.

Thus, the conservative approach is to replace the power supply filter caps. If, after considering the above, one still wants to run with the old filters he should equip himself with some means of varying the AC voltage to the receiver while monitoring the line current. Or better yet, monitoring the B+ current directly from the cathode of the rectifier tube (CAUTION: This can be dangerous to the inexperienced restorer due to the high voltage DC you will be connecting a meter to). The deluxe approach is to have a 0-140 volt variac to adjust line voltage and an AC ammeter with 0-1 and 0-3 amp ranges. The poor man's approach is a light socket in series with the receiver with a selection of light bulbs from 15 to 200 watts. Current is monitored by observing the brightness of the lamp. Not exact but better than nothing.

To reform the electrolytics one simply powers the receiver up at approximately 1/2 line voltage and watches what happens. After the tube heater temperatures stabilize you can observe the line current slowly decrease as the leakage current of the electrolytics drops. If line current starts creeping up things are not going well and you should check for warming caps. Over a period of approximately two hours you can work your way up to full line voltage and then allow the receiver to operate for several hours while checking for normal voltages throughout to discover other problems such as shorted paper capacitors and burning resistors. My rule of thumb is if a receiver can run continuously for 48 hours without any sign of problems the odds are it will be good for the long term. Preparing a chart of expected voltages for rapid checking will help to avoid the problem of returning to the work bench after performing a honey-do to decipher smoke signals. That's about all there is to it. Good luck with the article. I'm sure it will be useful to many. 73.

Arden Allen KB6NAX Vallejo, CA gumbear@pacbell.net

> From: James Hanlon <knjhanlon@qwest.net>
> To: Old Tube Radios <boatanchors@theporch.com>
> Subject: Need Advice
> Date: Sunday, December 10, 2000 4:49 PM
>
> Anchorites,
>
> I'm writing an invited article for ER tentatively titled, "How to Repair a Receiver." The idea is to help a new BA aficionado who has no experience take on and complete the restoration of a receiver. I'd appreciate some advice from y'all on reforming electrolytic filter capacitors. I know the basic game is to bring the dc voltage up on them slowly, watching the leakage current at each step until it decays to an acceptable value. (Am I correct, or is there a better way?) What would you suggest for voltage steps, and what is a reasonable value of leakage current for the capacitor to decay to before going to the next step? Also, do you have a feel for the leakage resistance one might measure across an acceptable filter cap while checking it with a VOM or VTVM?
>
> Thanks,
>
> Jim, W8KGI

Date: Mon, 11 Dec 2000 00:33:14 -0500 (EST)
From: "Marty's Refl. Drop" <polepeeg@aa4rm.ba-watch.org>
Message-Id: <200012110533.AAA19182@aa4rm.ba-watch.org>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: GB> QRG

> We need to avoid 3555-3565 window

I wouldn't worry too much Sandy

AWA riddled the "window" with Hartleys, TNTs, MOPAs, primative xtal ctrl fm 6P Sat. thru 6P Sun. this weekend & last

Nothing there but the 70-yr-old horror sigs (some of 'em anyway)

Your consideration is well intended, but there's been no FISTS or QRP acty in that arena for 2 wk.s

Christmas shopping excuse?

I'm still poppin' buttons re getting a 569 fm AC5AM in LA @ 1145Z today with my dueling UX210s. 30W fm, per AWA, a Cheatin' Hartley.

Listening with a FB7X & Browning preselector (to eliminate now-non-existant 2.5 mc maritime CW).

Marty in Atlanta, Ga.

Message-Id: <5.0.0.25.2.20001211001755.00a79dd0@popd.ix.netcom.com>
Date: Mon, 11 Dec 2000 00:57:13 -0500
To: Old Tube Radios <boatanchors@theporch.com>
From: Larry Wolken <rhys@ix.netcom.com>
Subject: FS: Give yourself an exceptional 75A-4 for the holidays
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"; format=flowed

Hi Gang --

I've got a Collins 75A-4 for sale. It's a nice one. Serial #649, it comes complete with the 4 to 1 vernier tuning knob and 3 Collins mechanical filters, an 800 cycle CW, the 3.1 kc SSB, and an 8.0 kc AM Collins filter from an R-390A adapted to plug into the existing third filter socket. The seven deadly caps have been replaced, and some of the values in the product detector circuit have been slightly altered to afford what I've found to be the finest recovered audio in any SSB rig I've ever owned including S-line, drake R4-C with Sherwood audio mods, and the R-390A with the TMC CV-591.

Cosmetically I would say this is a 9. The only flaws to the cabinet are very minor and barely visible scuffs. It's largest need is the dial drum paper sticker should be replaced. All numbers are readable but it's beginning to peel.

Electrically it seems to perform very well. I aligned it when I first acquired it about three years ago. The PTO is linear within +/- 5 kc's end to end on most bands. It's only need if you're fussy is that the original antenna terminal strip on the rear that was wired in parallel with the type N antenna connector next to it has been replaced with a bnc socket. In the last year I've found a replacement terminal strip and if it's preferable, I'll install it to closely match the original. I use the original type N socket so it has never been an issue.

This comes complete with an original (not copy) manual. Preference will be given to local buyer.

Price: $1,050. plus shipping if necessary

Larry Wolken N3OJD
Washington DC

Date: Mon, 11 Dec 2000 01:11:26 -0500 (EST)
From: "Marty's Refl. Drop" <polepeeg@aa4rm.ba-watch.org>
Message-Id: <200012110611.BAA19231@aa4rm.ba-watch.org>
To: Old Tube Radios <boatanchors@theporch.com>
Cc: boatanchors@theporch.com
Subject: Unending cupidity - "Bring 'em up slow"

The basic game is NOT to bring them up slowly. There's no "variac-hand" that knows what's going on inside an electrolytic - AND, oxide fil. 5U4-like things don't even conduct 'til V = 80% of design... which is beyond un-reformed old cap. explosion threshold.

BRING `EM UP SLOW ON VARIAC IS AS WRONG AS RUNNING AN ENGINE W/O OIL

Right way is to apply rated DC to them through a large series resistance & see if they in time come up to that voltage. Might have to lift B+ bleeder or 2 off gnd. for this - see schematic.

If electro.s don't they get hot due to internal leakage & they're to be pitched.

If they do, beware, the C may be low because of lost electrolyte.

My experience is +/- 80% of all "FP" twist-locks have seals enough that they're recoverable regardless of age.

Cardboard sleeve things are doomed a-priori. Half tubulars come back.

HEY if cap.s come back to rated boltage & hold it w/o case warming, the probability of sudden short-circuit failure is as low as the Falcons going to the superbowl.

Example, a Tech Master 20W Williamson running behind me. A pal recovered it from the street(?) with all broken tubes a decade ago. Somebody commenced to "fix" it via application of good practice & big wires & changing part after part. Guy got many in wrong place & electrolytic cans ignored.

Gave up & threw it in the road (Beatles?)

Yesterday I got thing back straight & did the "Electrolytic Reformation" stunt (Cathedral @ Wurtenburg? M Luther???)

Well I got impatient & let V rise to 375V on 475V-rated FP cans. Plugged her in & one began to go "snap-snap & get hot as hell. Let her cool & re-started reformation for another hour - & voila, now playing Bob Marley from a Browning RJ12 tuner just as fine as, well, whatever. (Browning treated same way - one .01 @ 600V changed out)

Neat to see a running 1950 hi-fi. (Spkr a Channel Master 4x6.5" oddity)

I repeat:

"BRING `EM UP SLOW ON VARIAC" IS AS WRONG AS RUNNING AN ENGINE W/O OIL
`
BTW (by the way), total o'haul time on Williamson was under 30 min.s

Marty

Message-ID: <3A34B620.F38774EB@attglobal.net>
Date: Mon, 11 Dec 2000 05:10:24 -0600
From: plmills@attglobal.net
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
CC: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: Need Advice
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

Hello Arden and list members,

I respectfully disagree with your approach. I use a variable DC bench power supply and slowly increase the voltage to the rated voltage of the electrolytic while keeping the charging current to 10 milliamperes or so. Sometimes this takes quite a little while to accomplish but there is no risk to the power supply of the unit being restored. Also, with a little practice, this can be done without disconnecting the electrolytic as one learns to factor in circuit resistance across the electrolytic.

I do agree that success is not a sure thing but I think I've had about 80% of my efforts succeed.

thanks,
Phil

Arden Allen wrote:

> Hi Jim;
>
> What a coincidence! I just finished reading your enjoyable article in ER about the RME-70. You had some good fun with that RX.
>
> About reforming electrolytics: Forty or more year old electrolytic capacitors, in my experience, can give you anywhere from reliable service to disastrous results. Disasters such as ruining a nice 5Y3GT, never to glow again, or the total damnation of a destroyed power transformer. Fortunately I have avoided blowing a transformer but I've suffered a couple of 5Y3GT losses.
>
> There is no assurance that what appears to be a satisfactorily functioning 'lytic will continue to be fine and not short. There is always a risk in trying to give new life to old filter caps. If you choose to gamble you should assure yourself some protection by adding a fuse (if not already present) to the primary circuit of the power transformer in receivers that have relatively few tubes (10 or less is my guess) or for lotta tube receivers a fuse in the B+ line.
>
> Most old electrolytics will fail by opening up due to corrosion of internal connections. Caps that are dried out (usually the cheaper cardboard container types) will be found to have very little capacitance remaining. But be warned, some caps will work fine and then suddenly short.
>
> Thus, the conservative approach is to replace the power supply filter caps. If, after considering the above, one still wants to run with the old filters he should equip himself with some means of varying the AC voltage to the receiver while monitoring the line current. Or better yet, monitoring the B+ current directly from the cathode of the rectifier tube (CAUTION: This can be dangerous to the inexperienced restorer due to the high voltage DC you will be connecting a meter to). The deluxe approach is to have a 0-140 volt variac to adjust line voltage and an AC ammeter with 0-1 and 0-3 amp ranges. The poor man's approach is a light socket in

> series with the receiver with a selection of light bulbs from 15 to 200
> watts. Current is monitored by observing the brightness of the lamp. Not
> exact but better than nothing.
>
> To reform the electrolytics one simply powers the receiver up at
> approximately 1/2 line voltage and watches what happens. After the tube
> heater temperatures stabilize you can observe the line current slowly
> decrease as the leakage current of the electrolytics drops. If line
> current starts creeping up things are not going well and you should check
> for warming caps. Over a period of approximately two hours you can work
> your way up to full line voltage and then allow the receiver to operate for
> several hours while checking for normal voltages throughout to discover
> other problems such as shorted paper capacitors and burning resistors. My
> rule of thumb is if a receiver can run continuously for 48 hours without
> any sign of problems the odds are it will be good for the long term.
> Preparing a chart of expected voltages for rapid checking will help to
> avoid the problem of returning to the work bench after performing a
> honey-do to decipher smoke signals. That's about all there is to it. Good
> luck with the article. I'm sure it will be useful to many. 73.
>
> Arden Allen   KB6NAX   Vallejo, CA   gumbear@pacbell.net
> ----------
> > From: James Hanlon <knjhanlon@qwest.net>
> > To: Old Tube Radios <boatanchors@theporch.com>
> > Subject: Need Advice
> > Date: Sunday, December 10, 2000 4:49 PM
> >
> > Anchorites,
> >
> > I'm writing an invited article for ER tentatively titled,
> > "How to Repair a Receiver." The idea is to help a new BA
> > aficionado who has no experience take on and complete the
> > restoration of a receiver. I'd appreciate some advice from
> > y'all on reforming electrolytic filter capacitors. I know
> > the basic game is to bring the dc voltage up on them slowly,
> > watching the leakage current at each step until it decays to
> > an acceptable value. (Am I correct, or is there a better
> > way?) What would you suggest for voltage steps, and what is
> > a reasonable value of leakage current for the capacitor to
> > decay to before going to the next step? Also, do you have a
> > feel for the leakage resistance one might measure across an
> > acceptable filter cap while checking it with a VOM or VTVM?
> >
> > Thanks,
> >
> > Jim, W8KGI

End of BOATANCHORS Digest 3056
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